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Influence of magnetic field on electric-field-induced local polar states in manganites

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Abstract

© 2015 AIP Publishing LLC. It is shown that creation of local charged states at the surface of the lanthanum-strontium manganite single crystals by means of bias application via a conducting atomic force microscope tip is strongly affected by magnetic field. Both a charge and a size of created structures increase significantly on application of the magnetic field during the induction. We argue that the observed phenomenon originates from a known tendency of manganites toward charge segregation and its intimate relation to magnetic ordering.

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